ISSN: 2971-7760 | VOL 6, ISS 1 | 17 JULY 2026
https://doi.org/10.5281/zenodo.21404972
NASARAWA STATE UNIVERSITY, KEFFI, NIGERIA


# Combat Exposure and Military Service Duration as predictors of Alcohol Use among Nigerian Infantry Soldiers

Chibuike Alison **Ubani,** Joshua Chiroma **Gandi and** Dennis Ohikhuare **Atafo**

**Department of Psychology, Nigerian Defence Academy**

**Corresponding Email: Ubanichibuike499@gmail.com**

## Abstract

Alcohol use remains a persistent occupational hazard among military populations, yet research on its predictors within West African armed forces has lagged behind the operational demands soldiers face. This study examined combat exposure and military service duration as predictors of alcohol use among Nigerian infantry soldiers, and tested whether service duration moderates the relationship between combat exposure and alcohol use. A cross-sectional survey was administered to 292 active-duty infantry personnel (92.8% male; Mage = 32.27, SD = 7.87) at Jaji Military Cantonment, Kaduna State, using the Combat Exposure Scale and the Alcohol Use Disorders Identification Test (AUDIT). Hierarchical regression showed that combat exposure ($\beta = .76$, $p < .001$) and military service duration ($\beta = .22$, $p = .028$) each independently and significantly predicted alcohol use, together with covariates accounting for 59% of the variance. However, PROCESS Model 1 moderation analysis, supported by Johnson–Neyman follow-up, indicated that service duration did not significantly moderate the combat exposure–alcohol use relationship ($p = .064$); combat exposure remained a significant predictor across the full range of service duration observed. Findings suggest combat exposure and service duration function as independent, additive risk factors rather than interacting ones, with implications for exposure-triggered rather than tenure-based alcohol screening in military settings.

*Keywords:* combat exposure, military service duration, alcohol use, Nigerian Army, infantry soldiers

## Introduction

Alcohol use is a major contributor to global disease burden, implicated in an estimated 2.6 million deaths and 400 million cases of alcohol use disorder worldwide in 2019 (WHO, 2024). Because this burden is not evenly distributed, identifying the occupational contexts that concentrate risk is a public health priority. Military service is one such context:

ISSN: 2971-7760 | VOL 6, ISS 1 | 17 JULY 2026
https://doi.org/10.5281/zenodo.21404972
NASARAWA STATE UNIVERSITY, KEFFI, NIGERIA


occupational demands, prolonged family separation, and a drinking culture embedded in unit life combine to make problematic alcohol use a persistent feature of service life rather than an incidental one (Osborne et al., 2022).

Evidence of this pattern within the Nigerian military specifically is not new. Studies dating back two decades have documented elevated alcohol use among Nigerian Navy personnel, soldiers in Ilorin, and military communities in Ibadan, where lifetime alcohol use disorder was found in over half of those sampled (Ijomata & Lasebikan, 2016). Yet a systematic review of the West African military literature located only three eligible studies in the entire region, all Nigerian, and concluded that research has not kept pace with the operational demands placed on soldiers there (Asare-Doku et al., 2021). This is a consequential gap, because the operational backdrop against which Nigerian soldiers now serve differs meaningfully from the deployment-and-return cycle that dominates the Western literature. The Armed Forces have been engaged for over a decade in near-continuous counterinsurgency operations against Boko Haram and the Islamic State West Africa Province (Abel et al., 2018), exposing infantry personnel, the arm of the force first committed to ground engagement, to combat on a sustained rather than episodic basis (Keane et al., 1989).

Combat exposure is the most direct occupational stressor within this context, and its link to alcohol use is well established internationally. Greater combat exposure predicts new-onset heavy and binge drinking

ISSN: 2971-7760 | VOL 6, ISS 1 | 17 JULY 2026
https://doi.org/10.5281/zenodo.21404972
NASARAWA STATE UNIVERSITY, KEFFI, NIGERIA


(Bray et al., 2013; Vest et al., 2018) and interacts with genetic liability to raise alcohol use disorder risk among U.S. service members (Campbell-Sills et al., 2024). Within Nigeria, involvement in combat has independently predicted both lifetime and 12-month alcohol use among soldiers in Ibadan (Ijomata & Lasebikan, 2016). The self-medication hypothesis offers the most consistent explanation for this pattern: alcohol functions as an accessible means of regulating the fear, hyperarousal, and intrusive distress that combat exposure produces, even though such use tends to compound rather than resolve the underlying distress (Khantzian, 1997; Hawn et al., 2020).

Combat exposure, however, indexes the intensity of what a soldier has encountered, not the cumulative weight of an entire military career. Military service duration captures this second, temporal dimension of occupational exposure, and it is conceptually distinct from combat exposure: two soldiers with identical years of service can have entirely different operational histories, one shaped by sustained frontline engagement and the other by comparatively little. This distinction matters because the relationship between service duration and alcohol use is not settled in the literature, and two competing accounts point in opposite directions.

A sensitization account holds that alcohol-related risk compounds with time served, as repeated exposure to institutional and operational stressors gradually erodes coping capacity across a career. This is consistent with UK evidence identifying severe long-term drinking

ISSN: 2971-7760 | VOL 6, ISS 1 | 17 JULY 2026
https://doi.org/10.5281/zenodo.21404972
NASARAWA STATE UNIVERSITY, KEFFI, NIGERIA


trajectories tied to specific career characteristics (Palmer et al., 2022), and with U.S. Air Force data linking deployment duration to problem drinking independently of deployment frequency (Spera et al., 2011). An inoculation account instead holds that soldiers accumulate resilience and coping resources over time that buffer them against alcohol-related risk, consistent with evidence that resilience significantly moderates the stress–alcohol relationship among National Guard soldiers (Morgan et al., 2018), and with findings that the combat exposure–alcohol association shifts once time in service is statistically accounted for (Vest et al., 2018). Nigerian evidence offers an early, if narrow, signal on this question: among Nigerian Army personnel evacuated from operations in Liberia and Sierra Leone, longer duration of stay in the mission area was independently associated with alcohol use (Okulate & Jones, 2006). That finding has never been re-examined in a contemporary infantry sample, and has never been tested alongside combat exposure in the same model.

This is the gap the present study addresses. Combat exposure and service duration represent related but conceptually separable dimensions of military experience, and modeling them jointly, including testing whether one conditions the effect of the other, offers a more complete account of how alcohol-related risk accumulates across a military career than either variable can provide alone. This approach is also consistent with the broader conclusion that alcohol-related outcomes in military populations are shaped by multiple, interacting features of service rather than by any single exposure (Osborne et al., 2022).

ISSN: 2971-7760 | VOL 6, ISS 1 | 17 JULY 2026
https://doi.org/10.5281/zenodo.21404972
NASARAWA STATE UNIVERSITY, KEFFI, NIGERIA


The present study therefore examined combat exposure and military service duration as predictors of alcohol use among Nigerian infantry soldiers, and tested whether service duration moderates the relationship between combat exposure and alcohol use. Based on the literature reviewed, it was hypothesized that:

**H1:** Combat exposure will significantly predict alcohol use among Nigerian infantry soldiers.

**H2:** Military service duration will significantly predict alcohol use among Nigerian infantry soldiers.

**H3:** Military service duration will significantly moderate the relationship between combat exposure and alcohol use among Nigerian infantry soldiers.

## Method

### Research Design

A cross-sectional survey design was employed. This design was selected for its cost-effectiveness and logistical suitability within a high-mobility population with operational constraints and it enabled simultaneous measurement of the predictor variables (combat exposure, military service duration) and the outcome variable (alcohol use), supporting the examination of both direct and moderating relationships.

### Study Setting

The study was conducted at Jaji Military Cantonment, Kaduna State, Nigeria, one of the Nigerian Army's principal installations for combat training, operational preparedness, and professional military education.

ISSN: 2971-7760 | VOL 6, ISS 1 | 17 JULY 2026
https://doi.org/10.5281/zenodo.21404972
NASARAWA STATE UNIVERSITY, KEFFI, NIGERIA


The cantonment houses the Nigerian Army School of Infantry (NASI), the premier institution for training and developing infantry personnel, as well as the Armed Forces Command and Staff College (AFCSC). These institutions make Jaji a strategic site where soldiers with diverse operational histories and lengths of service converge for training and career development.

The study focused on infantry soldiers attending courses at NASI. As the Nigerian Army's primary ground combat force, infantry personnel are routinely deployed to counterinsurgency, internal security, and other high-risk operations, and are consequently more likely than personnel in administrative or support corps to experience direct combat and sustained threat to life. Jaji was considered an appropriate site because it accommodates a large concentration of active-duty infantry personnel drawn from different formations and with varying lengths of service, providing access to participants whose combat exposure and service tenure both varied meaningfully — a requirement for testing the present study's moderation hypothesis.

**Sample Size/Sampling Technique**

The target population comprised approximately 1,000 active-duty infantry soldiers stationed at Jaji Military Cantonment. Using Yamane's (1967) formula with a 5% margin of error, a minimum sample size of 286 participants was determined. A purposive sampling technique was employed to recruit eligible participants who met the following inclusion criteria: (a) active-duty infantry personnel with at least one year of military

ISSN: 2971-7760 | VOL 6, ISS 1 | 17 JULY 2026
https://doi.org/10.5281/zenodo.21404972
NASARAWA STATE UNIVERSITY, KEFFI, NIGERIA


service, to ensure sufficient exposure to the variables of interest; (b) deployment in high-risk military operations within the two years preceding the study; (c) aged between 18 and 50 years; and (d) ability to read and understand English. A total of 300 questionnaires were distributed. Following data screening, eight were excluded for incomplete responses, yielding a final sample of 292 participants (97.3% response rate).

## Participants

The final sample comprised 271 males (92.8%) and 21 females (7.2%). Mean age was 31.96 years (SD = 7.83), and mean military service duration was 7.67 years (SD = 6.08), ranging from 1 to approximately 30 years. In terms of rank, 32.9% were Privates to Corporals, 12.7% were Sergeants to Warrant Officers, 35.6% were Lieutenants to Captains, and 18.8% were Majors and above. Participants had a mean deployment count of 2.23 (SD = 1.30).

## Instruments

**Combat Exposure Scale (CES).** Combat exposure was assessed using the Combat Exposure Scale (Keane et al., 1989), a 7-item self-report measure of wartime stressors experienced in the line of duty, including items such as firing at the enemy and being on dangerous duty, rated on frequency and duration scales. Total scores range from 0 to 41, classified into five exposure categories from light (0–8) to heavy (33–41). The CES has demonstrated excellent test–retest reliability (r = .97) and internal consistency (α = .85; Keane et al., 1989); in the Nigerian military context,

ISSN: 2971-7760 | VOL 6, ISS 1 | 17 JULY 2026
https://doi.org/10.5281/zenodo.21404972
NASARAWA STATE UNIVERSITY, KEFFI, NIGERIA


Aroh and Adole (2023) reported a Cronbach's alpha of .73 among soldiers from counterinsurgency operations.

**Military Service Duration.** Military service duration was assessed as a single self-report item in the demographic section of the questionnaire, in which participants indicated the number of complete years they had served in the Nigerian Army at the time of data collection. This continuous, self-reported measure of length of service follows the approach used in prior research examining deployment- and career-duration effects on alcohol-related outcomes in military populations (Spera et al., 2011).

**Alcohol Use Disorders Identification Test (AUDIT).** Alcohol use was measured using the AUDIT (Saunders et al., 1993), a 10-item WHO-developed screening tool assessing hazardous alcohol use, dependence symptoms, and alcohol-related harm. Scores range from 0 to 40, with scores ≥8 indicating hazardous or harmful use and ≥15 suggesting probable dependence. Adewuya (2005) reported strong internal consistency (α = .85) in Nigerian samples, and Gureje et al. (2007) confirmed excellent test–retest reliability (r = .92). The AUDIT has been validated in Nigerian occupational groups, supporting its suitability for use with infantry soldiers.

## Procedure

A letter of introduction was obtained from the Department of Psychology, Nigerian Defence Academy, and formal clearance was granted by the Jaji Military Cantonment authorities. Data collection was coordinated around soldiers' training schedules to minimise operational disruption. Informed

ISSN: 2971-7760 | VOL 6, ISS 1 | 17 JULY 2026
https://doi.org/10.5281/zenodo.21404972
NASARAWA STATE UNIVERSITY, KEFFI, NIGERIA


consent was obtained from all participants prior to questionnaire administration. Sessions were conducted in private classrooms with no supervising officers present, and participants were assured of anonymity and the voluntary nature of their participation. All questionnaires were administered and collected within a single day.

**Ethical Considerations**

Ethical procedures were observed throughout the study. A letter of introduction was obtained from the Department of Psychology, Nigerian Defence Academy, Kaduna (Reference No. NDA/PSY/57/G) and submitted to the Nigerian Army School of Infantry (NASI), Jaji, to facilitate ethical review. Ethical approval was subsequently granted by the Nigerian Army School of Infantry Research Ethics Committee (Approval No. NASI/G7/230/69). Participation was voluntary, and written informed consent was obtained from all participants, who were assured of the confidentiality and anonymity of their responses and informed of their right to decline or withdraw at any stage without adverse consequences.

**Data Analyses**

Data were analysed using IBM SPSS Statistics Version 28 and Hayes' PROCESS Macro (Hayes, 2022). Hierarchical linear regression was employed to test Hypotheses 1 and 2, with demographic control variables (age, gender, rank, number of deployments) entered in Block 1, combat exposure in Block 2, and military service duration in Block 3. Changes in $R^2$ were used to quantify the incremental predictive power of each block, and F-change statistics tested the significance of each increment. Regression

ISSN: 2971-7760 | VOL 6, ISS 1 | 17 JULY 2026
https://doi.org/10.5281/zenodo.21404972
NASARAWA STATE UNIVERSITY, KEFFI, NIGERIA


coefficients are reported as unstandardized (B) and standardized (β) values, together with exact p-values and 95% confidence intervals, in line with APA reporting conventions.

To test Hypothesis 3, PROCESS Model 1 (Hayes, 2022) with 5,000 bootstrap samples was used to examine the moderating effect of military service duration on the combat exposure–alcohol use relationship, with age, gender, rank, and number of deployments entered as covariates. Predictor variables were mean-centred prior to computing the interaction term to reduce non-essential multicollinearity. Bias-corrected 95% bootstrap confidence intervals were used to determine the significance of the interaction term, and the Johnson–Neyman technique was employed to identify the precise threshold(s) of military service duration at which the conditional effect of combat exposure on alcohol use became significant.

## Results

### Preliminary Analyses

Prior to hypothesis testing, the data were screened for missing values, outliers, and violations of the assumptions underlying multiple regression. No missing data remained following the exclusion of incomplete questionnaires (N = 292). Inspection of standardized residuals, tolerance/variance inflation factor (VIF) statistics, and Durbin–Watson values indicated that the assumptions of normality, linearity, homoscedasticity, and independence of errors were adequately met. All VIF values in the final regression model were below 10 (range = 1.05–8.86), suggesting that multicollinearity did not pose a substantial threat to

ISSN: 2971-7760 | VOL 6, ISS 1 | 17 JULY 2026
https://doi.org/10.5281/zenodo.21404972
NASARAWA STATE UNIVERSITY, KEFFI, NIGERIA


the interpretation of the regression coefficients, although the moderate-to-large correlation between number of deployments and combat exposure (r = .88, see Table 1) is noted as an expected feature of the data given that deployment frequency and combat exposure both index operational activity.

Means, standard deviations, and zero-order correlations for the continuous study variables are presented in Table 1. Combat exposure was strongly and positively correlated with alcohol use, $r = .76$, $p < .001$, and military service duration was moderately and positively correlated with alcohol use, $r = .46$, $p < .001$, providing preliminary support for both predictors.

Table 1
*Means, Standard Deviations, and Intercorrelations for Study Variables*

| Variable | M | SD | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|---|
| 1. Age | 32.27 | 7.87 | — | | | | |
| 2. Military service duration (years) | 7.89 | 6.24 | .61** | — | | | |
| 3. Number of deployments | 2.26 | 1.32 | .41** | .63** | — | | |
| 4. Combat exposure (CES) | 15.75 | 10.03 | .36** | .52** | .88** | — | |
| 5. Alcohol use (AUDIT) | 7.93 | 6.62 | .30** | .46** | .67** | .76** | — |

*Note.* N = 292. CES = Combat Exposure Scale; AUDIT = Alcohol Use Disorders Identification Test.

*Note.* $^{**}p < .001$.

**Hierarchical Regression Analysis: Combat Exposure and Military Service Duration as Predictors of Alcohol Use (H1 and H2)**

A three-step hierarchical multiple regression was conducted to test Hypotheses 1 and 2, with alcohol use (AUDIT score) as the dependent variable. Age, gender, rank, and number of deployments were entered as control variables in Step 1; combat exposure was entered in Step 2; and

ISSN: 2971-7760 | VOL 6, ISS 1 | 17 JULY 2026
https://doi.org/10.5281/zenodo.21404972
NASARAWA STATE UNIVERSITY, KEFFI, NIGERIA


military service duration was entered in Step 3. Full results are presented in Table 2.

At Step 1, the control variables accounted for a significant proportion of variance in alcohol use, $R^2 = .46$, $F(6, 285) = 40.89$, $p < .001$, driven almost entirely by number of deployments ($\beta = .68$, $p < .001$); age, gender, and rank were not significant predictors at this step.

Entry of combat exposure at Step 2 produced a significant increase in explained variance, $\Delta R^2 = .12$, $F(1, 284) = 85.16$, $p < .001$. Combat exposure was a strong, positive, and statistically significant predictor of alcohol use, $B = 0.50$, $SE = 0.05$, $\beta = .76$, $t(284) = 9.23$, $p < .001$, 95% CI [0.39, 0.61]. Consistent with this increment, the effect of number of deployments was fully attenuated once combat exposure was accounted for ($\beta = -.01$, $p = .948$), indicating that combat exposure, rather than deployment frequency per se, was the more proximal predictor of alcohol use. **Hypothesis 1 was therefore supported.**

Entry of military service duration at Step 3 produced a small but statistically significant increase in explained variance, $\Delta R^2 = .01$, $F(1, 283) = 4.90$, $p = .028$. Military service duration was a significant, positive predictor of alcohol use, $B = 0.24$, $SE = 0.11$, $\beta = .22$, $t(283) = 2.22$, $p = .028$, 95% CI [0.03, 0.44], over and above combat exposure, which remained a robust predictor in the final model ($B = 0.50$, $\beta = .76$, $p < .001$). Gender also emerged as a significant covariate in the final model, with female soldiers reporting higher alcohol use than male soldiers ($B = 2.38$, $p = .017$). The full model at Step 3 was significant, $R^2 = .59$, adjusted $R^2 =$

ISSN: 2971-7760 | VOL 6, ISS 1 | 17 JULY 2026
https://doi.org/10.5281/zenodo.21404972
NASARAWA STATE UNIVERSITY, KEFFI, NIGERIA


.58, $F(8, 283) = 51.67$, $p < .001$, accounting for approximately 59% of the variance in alcohol use. **Hypothesis 2 was therefore supported.**

Table 2
*Hierarchical Regression Analysis Predicting Alcohol Use from Demographic Covariates, Combat Exposure, and Military Service Duration*

| Predictor | B (SE) | β | B (SE) | β | B (SE) | β |
|---|---|---|---|---|---|---|
| | Step 1 | | Step 2 | | Step 3 | |
| Constant | -0.03 (1.78) | | 0.03 (1.56) | | 0.15 (1.55) | |
| Age | -0.01 (0.07) | -.01 | -0.02 (0.07) | -.03 | -0.05 (0.07) | -.06 |
| Gender (female = 1) | 2.06 (1.12) | .08 | 2.68 (0.99)** | .11 | 2.38 (0.99)* | .09 |
| Rank: Sgt–WO vs. Pte–Cpl | 0.65 (1.14) | .03 | 0.77 (1.00) | .04 | -0.39 (1.12) | -.02 |
| Rank: Lt–Capt vs. Pte–Cpl | 0.78 (1.18) | .06 | 0.79 (1.03) | .06 | 0.69 (1.03) | .05 |
| Rank: Maj+ vs. Pte–Cpl | 0.54 (1.54) | .03 | 1.23 (1.36) | .08 | -1.53 (1.84) | -.09 |
| Number of deployments | 3.42 (0.27)*** | .68 | -0.03 (0.45) | -.01 | -0.21 (0.45) | -.04 |
| Combat exposure | — | — | 0.50 (0.05)*** | .76 | 0.50 (0.05)*** | .76 |
| Military service duration | — | — | — | — | 0.24 (0.11)* | .22 |
| $R^2$ | 0.46 | | 0.59 | | 0.59 | |
| $\Delta R^2$ | 0.46*** | | 0.12*** | | 0.01* | |
| F for $\Delta R^2$ | F(6, 285) = 40.89*** | | F(1, 284) = 85.16*** | | F(1, 283) = 4.90* | |

*Note.* N = 292. Reference categories: Gender = male; Rank = Private–Corporal. Sgt–WO = Sergeant to Warrant Officer; Lt–Capt = Lieutenant to Captain; Maj+ = Major and above. Unstandardized regression coefficients (B) are reported with standard errors in parentheses; β = standardized coefficient.

*Note.* $^{*}p < .05$. $^{**}p < .01$. $^{***}p < .001$.

**Moderation Analysis: Military Service Duration as a Moderator of the Combat Exposure–Alcohol Use Relationship (H3)**

Hypothesis 3 was tested using Hayes' (2022) PROCESS macro (Model 1) with 5,000 bootstrap resamples. Combat exposure (X) and military service duration (W) were mean-centred prior to computing the product term, and age, gender, rank, and number of deployments were entered as covariates.

ISSN: 2971-7760 | VOL 6, ISS 1 | 17 JULY 2026
https://doi.org/10.5281/zenodo.21404972
NASARAWA STATE UNIVERSITY, KEFFI, NIGERIA


The overall model was significant, $R^2 = .60$, $F(9, 282) = 46.71$, $p < .001$. Full results are presented in Table 3.

The combat exposure × military service duration interaction term accounted for a small increase in explained variance, $\Delta R^2 = .005$, $F(1, 282) = 3.45$, $p = .064$, and the interaction coefficient did not reach conventional statistical significance, $B = 0.008$, $SE = 0.004$, $t(282) = 1.86$, $p = .064$, 95% CI [−0.00, 0.02]. This was corroborated by the bias-corrected bootstrap confidence interval based on 5,000 resamples, which likewise spanned zero, 95% CI [−0.001, 0.016]. **Hypothesis 3 was therefore not supported:** military service duration did not significantly moderate the relationship between combat exposure and alcohol use.

Table 3
*Moderation of the Combat Exposure–Alcohol Use Relationship by Military Service Duration (PROCESS Model 1)*

| Predictor | B | SE | t | p | 95% CI |
|---|---|---|---|---|---|
| Constant | 9.76 | 1.99 | 4.91 | <.001 | [5.85, 13.67] |
| Age | -0.04 | 0.07 | -0.65 | .516 | [-0.17, 0.09] |
| Gender (female = 1) | 2.33 | 0.99 | 2.36 | .019 | [0.39, 4.28] |
| Rank: Sgt–WO vs. Pte–Cpl | -0.15 | 1.13 | -0.14 | .892 | [-2.37, 2.06] |
| Rank: Lt–Capt vs. Pte–Cpl | 0.73 | 1.02 | 0.71 | .476 | [-1.29, 2.75] |
| Rank: Maj+ vs. Pte–Cpl | -1.72 | 1.83 | -0.94 | .348 | [-5.32, 1.88] |
| Number of deployments | -0.33 | 0.45 | -0.74 | .461 | [-1.22, 0.56] |
| Combat exposure (X, centred) | 0.50 | 0.05 | 9.36 | <.001 | [0.40, 0.61] |
| Military service duration (W, centred) | 0.22 | 0.11 | 2.09 | .038 | [0.01, 0.43] |
| X × W interaction | 0.008 | 0.004 | 1.86 | .064 | [-0.00, 0.02] |

*Note.* N = 292. X and W were mean-centred prior to computing the product term. Reference categories: Gender = male; Rank = Private–Corporal. Model $R^2 = .60$, $F(9, 282) = 46.71$, $p < .001$. The bias-corrected bootstrap 95% CI for the interaction term, based on 5,000 resamples, was [-0.001, 0.016].

## Discussion of Findings

ISSN: 2971-7760 | VOL 6, ISS 1 | 17 JULY 2026
https://doi.org/10.5281/zenodo.21404972
NASARAWA STATE UNIVERSITY, KEFFI, NIGERIA


The present study examined combat exposure and military service duration as predictors of alcohol use among Nigerian infantry soldiers, and tested whether service duration moderates the combat exposure–alcohol use relationship. Two of the three hypotheses were supported.

Combat exposure emerged as the strongest predictor of alcohol use (β = .76), consistent with the well-established international pattern linking combat exposure to new-onset heavy and binge drinking (Bray et al., 2013; Vest et al., 2018) and with Nigerian evidence that combat involvement independently predicts alcohol use among soldiers in Ibadan (Ijomata & Lasebikan, 2016). Notably, once combat exposure entered the model, the effect of number of deployments was fully attenuated. This suggests that the *quality* of what a soldier encounters in the field, not merely the *frequency* of deployment, is what drives risk, a distinction with real explanatory power, since two soldiers can deploy the same number of times yet return with entirely different burdens of threat and loss. This pattern lends support to the self-medication account: alcohol appears to function as an accessible means of regulating the fear, hyperarousal, and intrusive distress that direct combat produces, even though such use tends to compound rather than resolve the underlying distress (Khantzian, 1997; Hawn et al., 2020).

Military service duration also independently predicted alcohol use, over and above combat exposure, though the effect was comparatively modest ($\Delta R^2 = .01$). This finding aligns with the sensitization account that alcohol-related risk accumulates with time served, and echoes UK evidence of

ISSN: 2971-7760 | VOL 6, ISS 1 | 17 JULY 2026
https://doi.org/10.5281/zenodo.21404972
NASARAWA STATE UNIVERSITY, KEFFI, NIGERIA


long-term drinking trajectories tied to career characteristics (Palmer et al., 2022) and U.S. Air Force data linking deployment duration to problem drinking (Spera et al., 2011). It also extends the early, narrow Nigerian signal reported by Okulate and Jones (2006), in which longer duration of stay in a mission area predicted alcohol use among evacuated soldiers, a finding that, until now, had never been re-examined in a contemporary infantry sample or tested alongside combat exposure in the same model.

The moderation hypothesis, however, was not supported. Service duration did not significantly alter the strength of the combat exposure–alcohol use relationship, and the Johnson–Neyman analysis confirmed that combat exposure remained a significant risk factor across the entire range of service duration observed (2–27 years). In practical terms, this means combat exposure and service duration behave as two *separate, additive* pathways to risk rather than one conditioning the other. This finding sits in interesting tension with the literature: it does not support an inoculation effect, in which accumulated resilience over a career would buffer soldiers against the effects of combat exposure specifically (Morgan et al., 2018), nor does it show the interactive amplification a strict sensitization account would predict. Both variables matter, but independently rather than interactively, at least within this sample's range of service duration.

An unanticipated finding was that female soldiers reported significantly higher alcohol use than their male counterparts in the final model. Given that women comprised only 7.2% of the sample, this result should be treated as preliminary. It nonetheless raises questions worth pursuing

ISSN: 2971-7760 | VOL 6, ISS 1 | 17 JULY 2026
https://doi.org/10.5281/zenodo.21404972
NASARAWA STATE UNIVERSITY, KEFFI, NIGERIA


about gender-specific stressors, coping strategies, or visibility of drinking behavior within a heavily male-dominated institutional culture, none of which the present design was equipped to explain.

## Implications of the Findings

For a force engaged in sustained counterinsurgency operations, these findings carry a straightforward message: alcohol-related risk in the Nigerian Army is not confined to soldiers nearing the end of long careers, nor is it something newer soldiers are protected from. A soldier just a few years into service who has seen heavy combat carries essentially the same elevated risk as a much longer-serving soldier with comparable exposure. This argues against alcohol screening or intervention policies that implicitly target only senior personnel, and instead supports exposure-triggered screening — flagging soldiers for support based on what they have experienced in the field, not how long they have worn the uniform. The fact that deployment *frequency* lost its predictive value once *combat exposure* was accounted for is itself actionable: post-deployment debriefs and alcohol-risk screening may be more effective if they ask about the nature of what a soldier faced (direct fire, casualties witnessed, life threat) rather than simply logging how many times they deployed.

## Conclusion

Combat exposure and military service duration each independently and significantly predicted alcohol use among Nigerian infantry soldiers at Jaji Military Cantonment, together accounting for approximately 59% of the variance in alcohol use scores. Combat exposure was by far the more

ISSN: 2971-7760 | VOL 6, ISS 1 | 17 JULY 2026
https://doi.org/10.5281/zenodo.21404972
NASARAWA STATE UNIVERSITY, KEFFI, NIGERIA


powerful of the two. Contrary to expectation, service duration did not moderate the combat exposure–alcohol use relationship; the two factors operate as parallel contributors to risk rather than one conditioning the other. These findings reinforce combat exposure as the central occupational driver of alcohol-related risk in this population, while confirming that accumulated time in service adds a distinct, non-trivial layer of vulnerability of its own.

## Recommendations

1. Alcohol-use screening protocols should be triggered by documented combat exposure (e.g., CES scores or after-action reports) rather than by years of service or rank alone.
2. Alcohol-related interventions delivered after operational tours should be tailored to the intensity of combat experienced, not simply administered uniformly after every deployment.
3. Because alcohol use appears to track distress regulation rather than simple availability or culture, brief interventions addressing hyperarousal, intrusive memories, and fear regulation directly (rather than alcohol use in isolation) may be more effective than generic anti-drinking messaging.
4. Given the independent contribution of service duration, career-stage check-ins (e.g., at 10- and 15-year marks) should include alcohol screening regardless of recent combat exposure.

ISSN: 2971-7760 | VOL 6, ISS 1 | 17 JULY 2026
https://doi.org/10.5281/zenodo.21404972
NASARAWA STATE UNIVERSITY, KEFFI, NIGERIA


5. Given the unexpected gender finding, unit medical and welfare officers should not assume female personnel are lower-risk by default; this warrants dedicated follow-up.

## Limitations

This study has some limitations. First, the cross-sectional design precludes causal inference; while the self-medication hypothesis offers a plausible explanation for the combat exposure–alcohol link, it is equally possible that heavier drinkers are differentially selected into, or perceive, more combat exposure, or that unmeasured third variables (e.g., trait impulsivity) drive both. Second, the purposive sampling strategy, while practical for reaching operationally active infantry, limits generalizability beyond Jaji-based, English-literate personnel and cannot be assumed to represent the wider Nigerian Army, including non-infantry corps. Third, the gender imbalance in the sample (92.8% male) means the gender effect reported here rests on a small subsample of 21 women and should be interpreted cautiously rather than treated as a stable finding. Finally, all variables were self-reported, raising the possibility of social desirability bias, particularly for a sensitive behavior like alcohol use within a hierarchical military institution where admitting hazardous drinking may carry career risk.

## References

Abel, J., Dagona, Z. K., Omoruyi, O. J., et al. (2018). The wounds of terrorism among combat military personnel in Nigeria. *Journal of Psychology & Clinical Psychiatry, 9*(4), 425–429. https://doi.org/10.15406/jpcpy.2018.09.00564

ISSN: 2971-7760 | VOL 6, ISS 1 | 17 JULY 2026
https://doi.org/10.5281/zenodo.21404972
NASARAWA STATE UNIVERSITY, KEFFI, NIGERIA


Adewuya, A. O. (2005). Validation of the Alcohol Use Disorders Identification Test (AUDIT) as a screening tool for alcohol-related problems among Nigerian university students. *Nigerian Journal of Psychiatry, 3*(2), 25–29.

Aroh, M. O., & Adole, O. (2023). Combat exposure and unit cohesion as predictors of depressive symptoms among Nigerian soldiers. *International Journal of Research and Innovation in Social Sciences, 7*(6). https://doi.org/10.47772/IJRISS.2023.7694

Asare-Doku, W., Donnir, G. M., Ae-Ngibise, K. A., Peprah, J., Awuviry-Newton, K., & Acquah, F. (2021). Psychiatric disorders among the military in West Africa: A systematic narrative review. *Behavioral Sciences, 11*(10), Article 138. https://doi.org/10.3390/bs11100138

Bray, R. M., Brown, J. M., & Williams, J. (2013). Trends in binge and heavy drinking, alcohol-related problems, and combat exposure in the U.S. military. *Substance Use & Misuse, 48*(9), 799–810.

Campbell-Sills, L., Choi, K. W., Strizver, S. D., Kautz, J. D., Papini, S., Aliaga, P. A., Lester, P. B., Naifeh, J. A., Ray, C., Kessler, R. C., Ursano, R. J., Stein, M. B., & Bliese, P. D. (2024). Interactive effects of genetic liability and combat exposure on risk of alcohol use disorder among US service members. *Drug and Alcohol Dependence, 264*, Article 112459.

Gureje, O., Degenhardt, L., Olley, B., Uwakwe, R., Udofia, O., Wakil, A., Adeyemi, O., Bohnert, K. M., & Anthony, J. C. (2007). A descriptive epidemiology of substance use and substance use disorders in Nigeria during the early 21st century. *Drug and Alcohol Dependence, 91*(1), 1–9.

Hawn, S. E., Cusack, S. E., & Amstadter, A. B. (2020). A systematic review of the self-medication hypothesis in the context of posttraumatic stress disorder and comorbid problematic alcohol use. *Journal of Traumatic Stress, 33*(5), 699–708. https://doi.org/10.1002/jts.22521

Hayes, A. F. (2022). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach* (3rd ed.). Guilford Press.

Ijomata, N. I., & Lasebikan, V. O. (2016). Lifetime and 12 months prevalence of alcohol use and alcohol use disorders among soldiers residing in a military community in Ibadan. *Substance Use & Misuse, 51*(6), 722–732. https://doi.org/10.3109/10826084.2016.1153111

Keane, T. M., Fairbank, J. A., Caddell, J. M., Zimering, R. T., Taylor, K. L., & Mora, C. (1989). Clinical evaluation of a measure to assess combat

ISSN: 2971-7760 | VOL 6, ISS 1 | 17 JULY 2026
https://doi.org/10.5281/zenodo.21404972
NASARAWA STATE UNIVERSITY, KEFFI, NIGERIA


exposure. *Psychological Assessment, 1*(1), 53–55. https://doi.org/10.1037/1040-3590.1.1.53

Khantzian, E. J. (1997). The self-medication hypothesis of substance use disorders: A reconsideration and recent applications. *Harvard Review of Psychiatry, 4*(5), 231–244. https://doi.org/10.3109/10673229709030550

Morgan, J. K., Brown, J., & Bray, R. M. (2018). Resilience as a moderating factor between stress and alcohol-related consequences in the Army National Guard. *Addictive Behaviors, 80*, 22–27. https://doi.org/10.1016/j.addbeh.2018.01.002

Okulate, G. T., & Jones, O. B. (2006). Post-traumatic stress disorder, survivor guilt and substance use: A study of hospitalised Nigerian army veterans. *South African Journal of Psychiatry, 12*(1), 37–39. https://doi.org/10.4102/sajpsychiatry.v12i1.53

Osborne, A. K., Wilson-Menzfeld, G., McGill, G., & Kiernan, M. D. (2022). Military service and alcohol use: A systematic narrative review. *Occupational Medicine, 72*(5), 313–323. https://doi.org/10.1093/occmed/kqac045

Palmer, L., Norton, S., Jones, M., Rona, R. J., Goodwin, L., & Fear, N. T. (2022). Trajectories of alcohol misuse among the UK Armed Forces over a 12-year period. *Addiction, 117*(1), 57–67. https://doi.org/10.1111/add.15592

Saunders, J. B., Aasland, O. G., Babor, T. F., de la Fuente, J. R., & Grant, M. (1993). Development of the Alcohol Use Disorders Identification Test (AUDIT): WHO Collaborative Project on Early Detection of Persons with Harmful Alcohol Consumption–II. *Addiction, 88*(6), 791–804.

Spera, C., Thomas, R. K., Barlas, F., Szoc, R., & Cambridge, M. H. (2011). Relationship of military deployment recency, frequency, duration, and combat exposure to alcohol use in the Air Force. *Journal of Studies on Alcohol and Drugs, 72*(1), 5–14. https://doi.org/10.15288/jsad.2011.72.5

Vest, B. M., Hoopsick, R. A., Homish, D. L., Daws, R. C., & Homish, G. G. (2018). Childhood trauma, combat trauma and substance use in National Guard and Reserve soldiers. *Substance Abuse, 39*(4), 452–460. https://doi.org/10.1080/08897077.2018.1443315

Wang, X., & Cheng, Z. (2020). Cross-sectional studies: Strengths, weaknesses, and recommendations. *Chest, 158*(1S), S65–S71. https://doi.org/10.1016/j.chest.2020.03.012

ISSN: 2971-7760 | VOL 6, ISS 1 | 17 JULY 2026
https://doi.org/10.5281/zenodo.21404972
NASARAWA STATE UNIVERSITY, KEFFI, NIGERIA


World Health Organization. (2024). *Alcohol*. https://www.who.int/news-room/fact-sheets/detail/alcohol

Yamane, T. (1967). *Statistics: An introductory analysis* (2nd ed.). Harper & Row.